Gravatt, Dan

From: Ammon, Doug
Sent: Friday, July 26, 2013 2:12 PM
To: Gravatt, Dan
Subject: Fw: West Lake Comments
Attachments: West Lake Landfill_72613.docx

From: Bartenfelder, David
Sent: Friday, July 26, 2013 3:11:00 PM
To: Ammon, Doug
Subject: West Lake Comments

Doug-

Please find the attached file with my comments on the Cover and F&T Scopes of Work. Thanks for your patience. If Region 7 has any comments or would like to seek any clarification, I would be more than happy to do so after I return on August 12.

Dave

Dave Bartenfelder, Ph.D.

Mailing Address:

USEPA
Office of Superfund Remediation and Technology Innovation
Mailcode: 5204P
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Physical Address:

USEPA
Office of Superfund Remediation and Technology Innovation
2777 South Crystal Drive
Arlington, VA 22202
(703) 603-9047

West Lake Landfill
Scope of Work: Alternative Cover Designs and Fate and Transport Modelling

Alternative Cover Designs

- Not sure why an ET Cover is even being considered at the site since its deficiencies have already been identified (Albright and Benson).
- Disposal of similar waste at Weldon Springs has an established cover design with a proven performance history that should be considered. While the Weldon springs cover might appear as over-engineering, components of the system are effective and could reduce cost and material mass tot eh West Lake cover.
- The option of evaluating a more protective RCRA cover should be considered. While a RCRA Subtitle C cover system might be very conservative it does compensate for the lack of a liner system with leachate collection.
- The lack of a cover system that uses a geosynthetic liner is missing. While there are limitations to solely using a geosynthetic liner, proper engineering allows for effective performance.

Fate and Transport Modeling

- The use of the various models should be sufficiently flexible to accommodate the range of landfill system specifications, identified in the SCOPE and suggested above.
- The assumption of future radium decay needs to be critically evaluated and accounted for.
- While the SCOPE discusses simulating future climate conditions and subsequent infiltration, the inclusion of resident moisture need to accounted for in all simulations.
- The incorporation of a colloidal transport simulation should be included since it has been already identified that the depth of contaminant is selected area was deeper that expected due to aqueous transport.
- The statement indicating that co-precipitation is expected to be a dominant process appears to be a bit premature and unsupported.
- The statement regarding the influence on increasing pH is unusual. While it is recognized that biodegradation processes will general result in reduced redox and pH; without an alkaline source, the pH in the aqueous environment will be challenged to increase above neutral pH, and likely to remain less than neutral.
- The "Graded Approach" looks to be a reasonable approach to the addressing he modeling issue.
- While this effort is solely identified as modeling, it was be remiss to not include corroboration of the modeling with supporting groundwater monitoring well data. Just caution on the elimination of pathways too earnestly. Should establish an "accepted" criteria for discontinuing model runs.
- The most controversial areas at West Lake LF would benefit from the installation of additional groundwater monitoring wells, especially in the 'washout' area and along Charles Road where groundwater-surface water interface occurs.
- While not adverse to the use of the following models: HELP, HYDRUS and PHREEQC, all well known to the commenter. It might be constructive to use some other models that are EPA supported (e.g., MINTEQA2)